Signal Sensor User Guide

Model: AX1046

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Contents

Introduction

Overview

Signal Sensor (SSR) sends a signal to Axon cameras when a user draws their firearm or other assigned device. It attaches to popular duty holsters and is powered by an off-the-shelf coin cell battery.

Signal Sensor is recommended for use on:

- Axon Body 3 and later cameras
- Axon Fleet 3 and later vehicle cameras

It is also supported on Axon Body 2, Flex 2, Body Workforce, and Fleet 2 cameras. Contact your Axon representative to enable Compatibility mode if you use these cameras.

Signal Sensor can also be used with other devices such as handcuffs, pepper spray, or a baton via specific pouches. This manual provides instruction for its most common use with a firearm; its use with those other devices is similar.

Note

A Signal Sensor can NOT be physically swapped between holsters or pouches at will. Calibrate or recalibrate the sensor before use if it is moved to another a holster or pouch.

Watch this video for an overview of Signal Sensor user features.

Important safety instructions

Warning

Read all warnings and instructions. Save and follow these safety instructions.

The most up-to-date warnings and instructions are available at www.axon.com/legal.

Product functions and specifications may change without notice and the actual product may vary from the illustrations in this document.

Read these warnings prior to using this sensor.

- Please read and carefully follow all sensor installation and operation instructions. Failure to follow these instructions may result in improper installation which could interfere with the holster's performance.
- Do not install the sensor in a way that interferes with the proper functioning of the holster.
- Do not install the sensor while a firearm is in the holster.
- Use great care when handling, storing or transporting firearms or when placing or removing a firearm from a holster.
- If a holster fitted with a sensor becomes worn, loose, broken, defective or ill-fitting, or unsafe, cease use immediately.

Failure to follow these warnings may result in serious injury or death to you or others.

In daily use, keep Axon Signal Sensor away from magnets or magnetic devices, such as speakers and magnetic mounts used with a body camera. Contact with a magnet will not damage the sensor but could cause it to signal nearby cameras to begin recording.

Operation

Note

Admins or armors looking for initial setup guidance should skip to Setup and callibration on page 6.

Signal Sensor from Axon mounts to either an integrated holster or a bracket that adapts your existing holster. Once properly installed and calibrated, it uses Axon Signal technology to automatically turn on nearby Axon Body and Fleet cameras if you draw your equipment. If it's on your holster, your armorer has already installed it, assigned it to you, and calibrated it. Let's talk about how to use it.

Operating modes

The LED only illuminates during Mute mode and for setup.

Mode	Access	LED	Description
Live	Normal state; no button presses needed	none	Sensor enters Live mode once calibrated.
Mute	Press button for about five seconds	 or	Blinks green if firearm is holstered, red if not. After a set time of inactivity, sensor returns to Live mode.
Setup			This mode should generally only be used in-office by an admin/armorer. Requires ADM with proper permissions. See Setup and callibration on page 6.

Device layout

The LED mentioned above is on top of the interaction button.

1. LED shows status information
2. Button for interaction

Mute mode

To remove your firearm without Signal starting a recording on your body camera (or on other nearby cameras), activate Mute mode: press the button for about five seconds until the LED flashes green ▮▮▮▮▮, then remove your firearm. Mute mode also confirms with a message on the same user's body camera.

If you don't draw your firearm within 30 seconds (agency configurable up to 90 seconds), Signal Sensor returns to Live mode (LED off). Returning the firearm to its holster after the sensor has returned to Live mode does *not* trigger a recording event.

Watch these videos for overviews of Mute mode and holstering and unholstering.

LED reference

General Operation	
LED	**Activity**
Green, slow	Battery inserted
Green, slow	In Mute mode, firearm holstered
Red, slow	In Mute mode, firearm unholstered

Setup and Calibration	
LED	**Activity**
Green, slow	Calibration: device chosen Calibration: holstered
Green, fast	Calibration: started
Red, slow	Calibration: unholstered

Watch this video for an overview of LED indicators.

Signal Sensor and your body camera

If you also use an Axon Body camera (Body 4, Body 3, or Body Workforce) and it's assigned to the same user as your Signal Sensor (you), you can use it to view information about your sensor, which updates the body camera about every two hours. The body camera, in turn, passes this information on to Axon Evidence the next time it docks and uploads.

Battery life – A low sensor battery triggers a notification on the camera screen.

Properties – Open the menu of your body camera and use the Volume Down button to scroll down to Signal Sensor. Select it to view your sensor type, serial number, battery status, firmware (FW) version, and time stamp.

- To open the menu on Body 4, double-press **Select** (between the volume buttons).
- To open the menu on Body 3 or Body Workforce, press **Power** and **Program** (below the volume buttons) simultaneously.

Activation – When a Signal Sensor turns on your body camera, its type and serial number appears briefly on the display.

Updating – About once a typical shift, the body camera will push any available firmware updates to your sensor, ensuring it is always fully updated.

Watch this video for more information about Signal activation with Axon cameras.

Setup and callibration

Setup

Note

This topic is normally for the armorer or admin who sets up Signal Sensors. For user guidance, see Operation on page 3.

Watch this video for an overview of Signal Sensor admin features.

Signal Sensor from Axon is best administered and maintained using Axon Device Manager (ADM), available from your app store (Apple or Android). The following sections discuss how to use ADM with Signal Sensor. Learn more about ADM at my.Axon.

This topic describes how to add a sensor to ADM, assign the type of holster, and assign a user. The next two sections discuss installation and calibration. After your sensors are completely set up, you may want to jump directly into one of these sections or topics:

- Start setup (below)
- Assign user and equipment (see page 8)
- Installation (see page 15)
- Calibration (see page 1)

Note

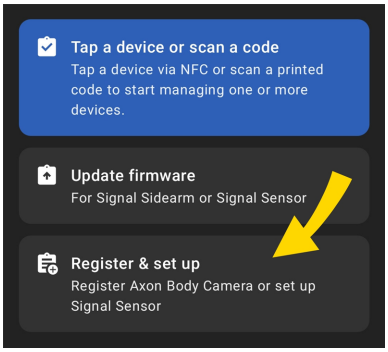
- **For previously calibrated devices**: To enter setup mode, press and hold the Mute button for about 5 seconds, then quickly double-tap the button . From setup mode, you can run ADM.
- **For new devices**: To enter setup mode, insert a battery into the sensor. If it goes to sleep after 30 seconds of no connection, press the Mute button to wake it up.

Start setup

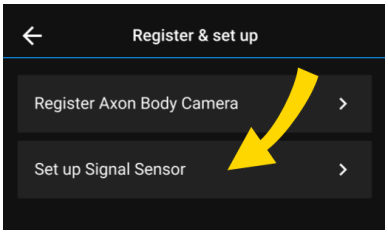
Sensors typically arrive pre-registered to your organization. If not registered yet, setup includes registration, assigning the sensor to a user, assigning a holster, and calibration.

If the ADM screens shown in the following steps differ from yours, update your app.

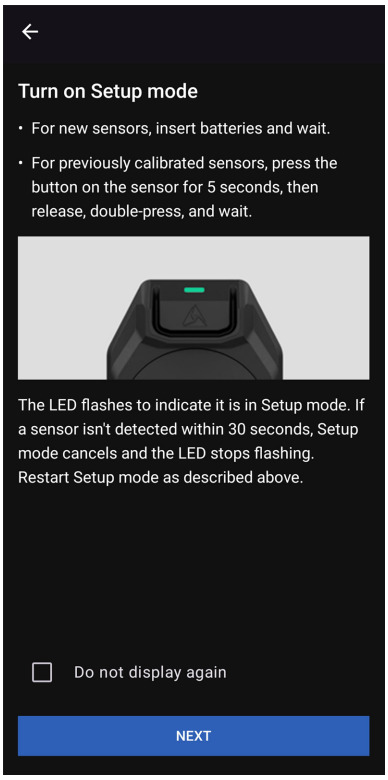
1. In ADM, select **Register & set up**.



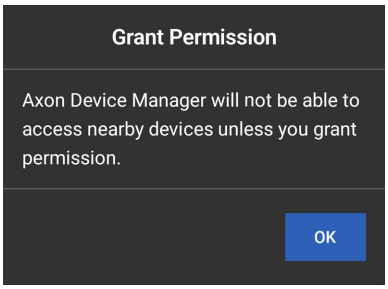
2. Select **Set up Signal Sensor**.

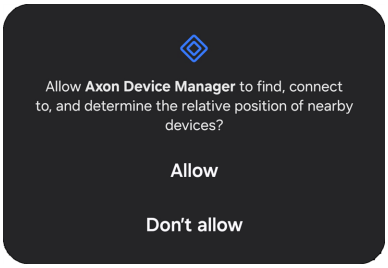


3. Insert a battery into each sensor (see Battery replacement on page 28) and wait for them to enter Setup mode, indicated by the LED rapidly flashing green. Select **Start**, then **Next**. You can work with up to seven sensors at once.

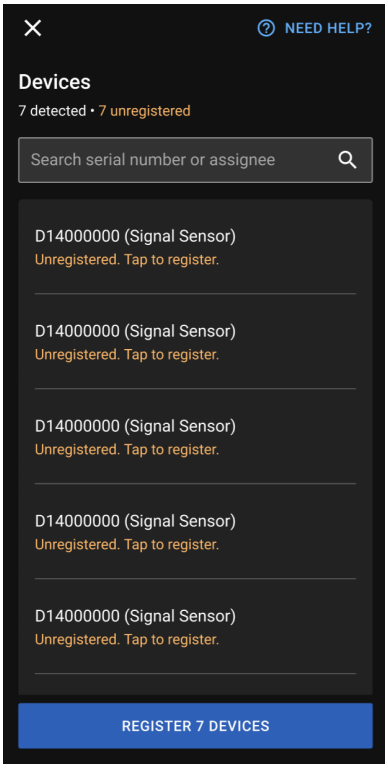


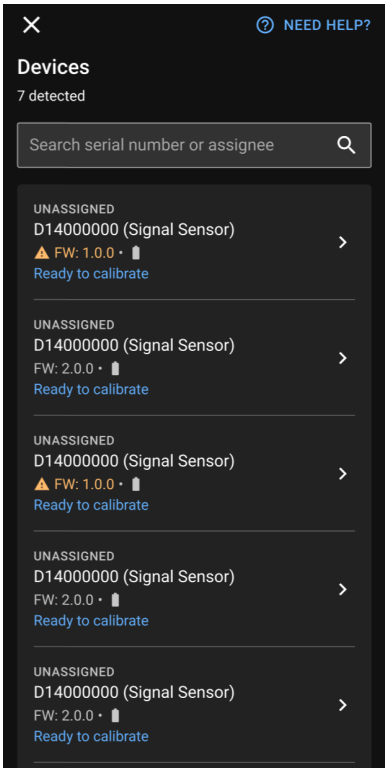
4. If a message requests additional permissions to access nearby devices, tap **OK** and then **Allow**, then return here and continue.





5. Keep sensors within one meter of your phone. ADM lists detected devices and notes which ones need registration. Tap **Register x Devices** at the bottom, then **Yes** to confirm the agency you're signed into. Each device's status will change from **Unregistered** to **Registering...**, then **Connecting...**, then **Synchronizing...**, and finally **Ready to calibrate**.

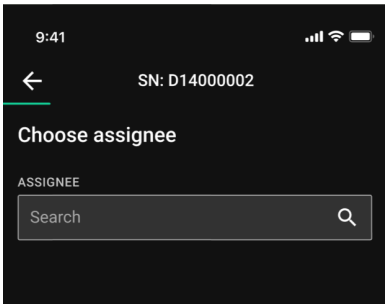




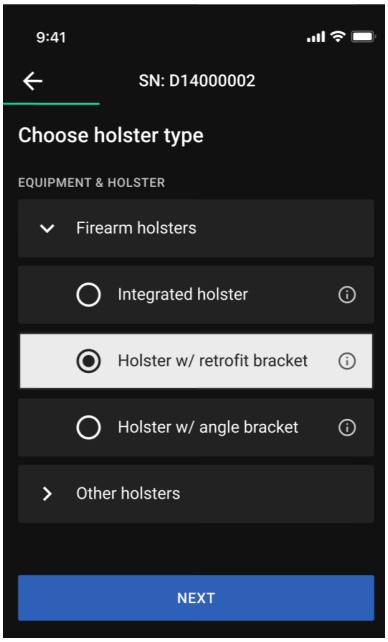
Assign user and equipment

After a sensor finishes updating and ADM shows **Ready to calibrate**, tap it to continue.

1. If the sensor is not already assigned to a user, do that now, otherwise skip to the next step. Tap one of the sensor tiles, tap in the Search field, enter the first few letters of a user name, then select it from the list and tap **Return** (not shown).



2. Select the type of holster, then **Next**.



Calibration

Note

This topic is normally for the armorer or admin who sets up Signal Sensors. For user guidance, see Operation on page 3.

The topic describes how to calibrate the sensor, which is best accomplished using Axon Device Manager (ADM), available from your app store (Apple or Android).

Also at the end of this topic:

- Restart setup on page 13
- Axon Evidence settings on page 6

For quick access to recalibrate: in Mute mode (press button for about five seconds), press the button twice to enter Setup mode and connect to ADM.

Watch this video for an overview of calibration.

Calibrate

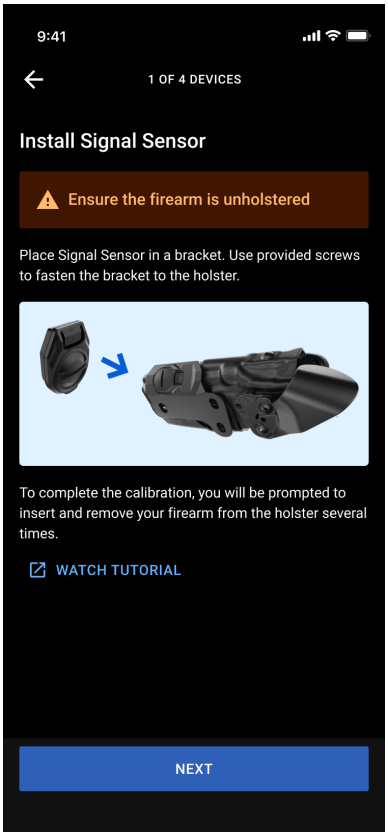
If the sensor is not yet registered and ready to calibrate, or if you haven't assigned a holster and user yet, see Setup on page 6. If a required sensor retrofit bracket isn't installed on the holster yet, see Installation on page 15. After these items are complete, continue below.

Warning

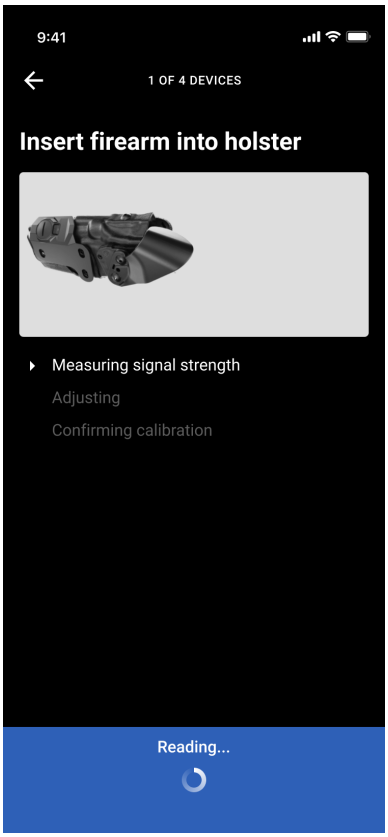
Ensure the firearm is unloaded during this process.

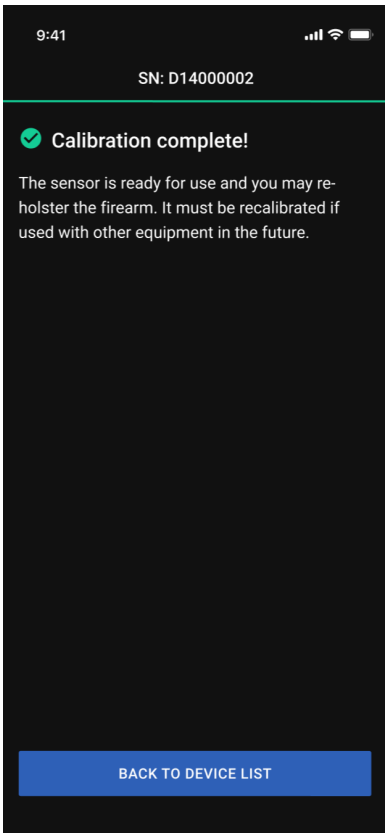
With a user and holster type assigned and the sensor retrofit bracket (if needed) installed on a holster, it's now time to calibrate.

1. Install the sensor on a holster, then tap **Next**.

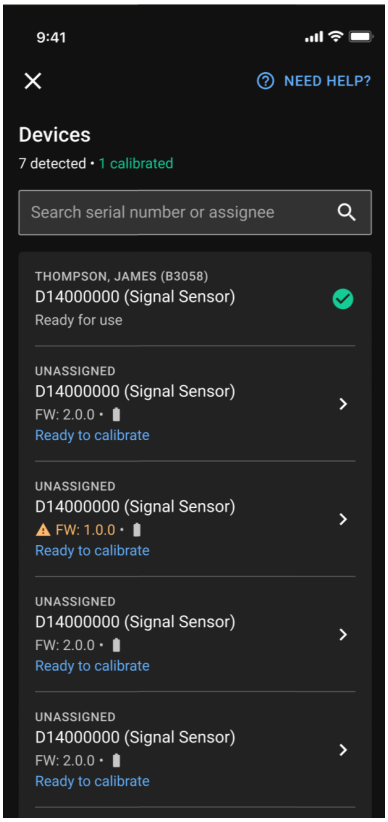


2. ADM will instruct you to insert and remove the firearm from the holster several times so the sensor can calibrate itself to the two different states. When you remove the firearm, remove it entirely from the holster and keep it separate until instructed to re-holster it. When calibration is complete (second screen below), reholster the firearm and tap **Back to Device List**.

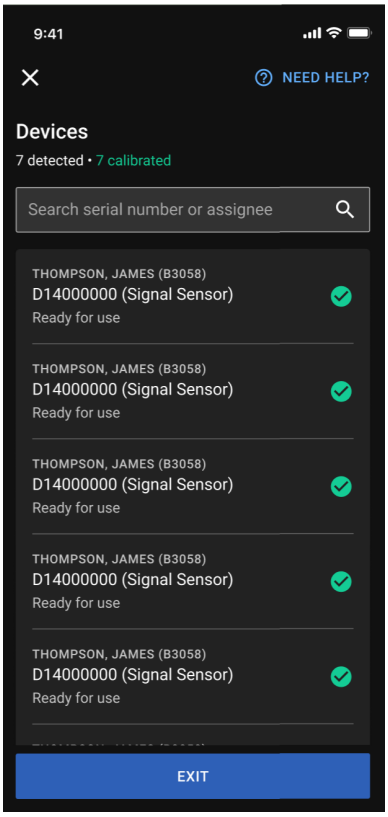




3. Calibrated devices feature a green check mark. To calibrate another sensor, tap a tile showing **Ready to calibrate** and resume at step 1.



4. Once all sensors are assigned and calibrated, setup is complete. Tap **Exit**.



The sensors are now ready for use: registered, assigned, and calibrated.

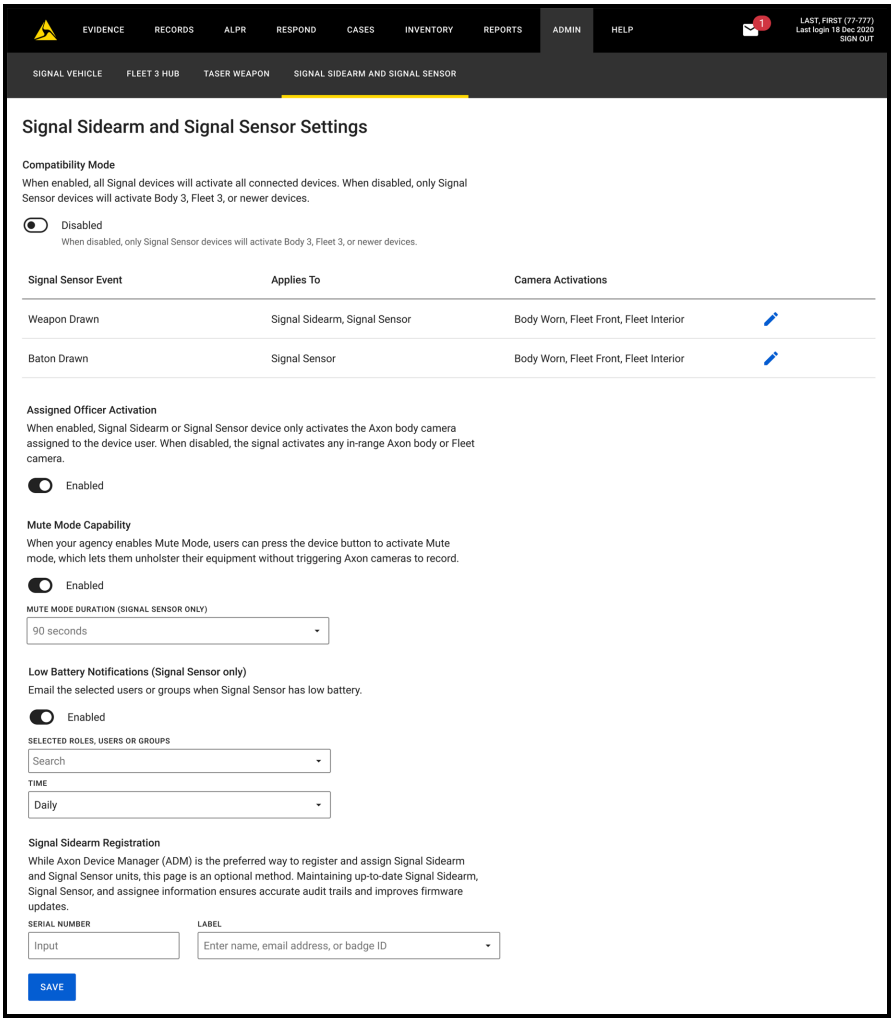
Restart setup

To restart setup on a *calibrated* sensor:

1. Press the button for about five seconds, then quickly double-tap the button until the LED blinks green ▮▮▮▮▮ to confirm entry into Setup mode.
2. Continue with Start setup on page 6.

A sensor must be recalibrated if moved to a different device. For an uncalibrated sensor, simply Start setup.

Adjust these organization-wide settings of your sensors in Axon Evidence at **Admin** > **Signal Sidearm and Signal Sensor**. Select **Edit** ✎ to change an event, toggle a property on or off as required, and register sensors to users.



If your agency uses Axon Body 2 or Axon Fleet 2 cameras, contact your Axon representative about Compatibility mode. If your agency does not use these cameras, this setting does not appear.

Installation

Note

This topic is normally for the armorer or admin who sets up Signal Sensors. For user guidance, see Operation on page 3.

The following holster and mounting options support Signal Sensor:

- **Integrated holster**: Comes ready to accept a Signal Sensor module (See the left example image below)
- **Brackets**: Adds mounting space for a Signal Sensor module on a standard holster (See the right example below)
- **Signal Sensor retrofit bracket**: Lets you use Signal Sensor in a space designed for a Signal Sidearm sensor (See link in the bullet points below)

Tools needed

A 1/8" hex key or #2 Phillips screwdriver, depending on your holster:

- Safariland holsters commonly use the 1/8" hex key.
- Blackhawk holsters commonly use a #2 Phillips screwdriver.

Note

- Your holster brand or model may require specific tools. Check your holster's user manual for more information.
- Using a removable threadlocker is recommended for all screws.

These instructions show sample holsters. While holsters differ, the overall procedure is the same.

Read this Installation section completely before beginning. Holster must be empty during installation.

Choose one of the following installation procedures:

- Install on integrated holster (next section)
- Install with bracket (see page 17)
- Install with Signal Sidearm retrofit bracket (see page 22)

Install on integrated holster

1. With the battery door facing out, set the bracket into the dedicated space on your holster, ensuring the sensor fits into the recessed portion so it contacts the holster.

2. Secure the sensor with the cover and screws that came with your holster; don't over-tighten.

Install with bracket

Use a Signal Sensor retrofit bracket to add Signal Sensor to a non-integrated holster. Here's one type:

The following steps feature the bracket in light blue for visibility.

1. Separate the belt clip and holster. This usually requires removing three screws.

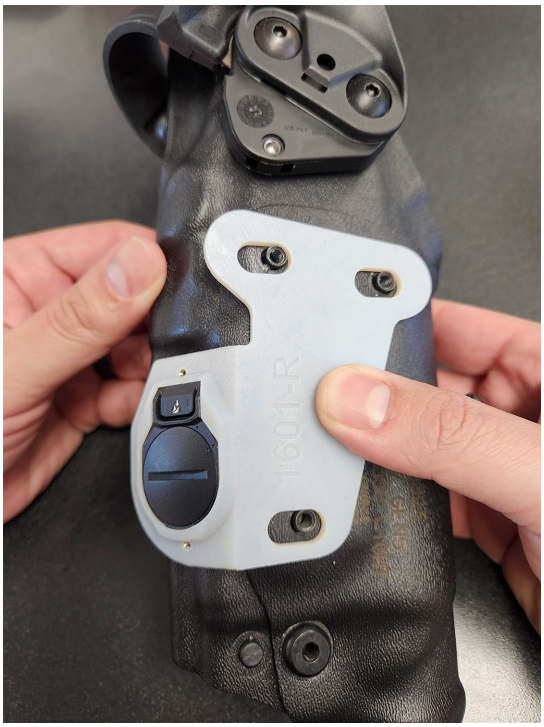
2. Insert the Signal Sensor into the empty space of the retrofit bracket with the battery door down.

3. Add the retention ring and secure with two screws. Don't overtighten.

4. Turn the bracket over and set in on the holster, positioning it so the sensor is as close to the holster body as possible.

Caution

Gaps between the holsters and the sensor can cause calibration issues.



5. Add the belt clip on top of the bracket.

6. While holding both the retrofit bracket against the holster and the belt clip in place, install the longer screws provided, but do not fully tighten yet.

7. Check once more that the sensor is still positioned as close to the holster body as possible, then tighten the screws. Don't over-tighten.

Install with Signal Sidearm retrofit bracket

The Signal Sidearm retrofit bracket (left image below) lets you place Signal Sensor in a space previously used by the earlier generation Signal Sidearm sensor (right image below).

1. Turn the Signal Sidearm bracket upside down and pull the yellow retention tab up. It will give slight resistance and then click open.

2. Insert the Signal Sensor into the empty space with the battery door down and the top (straight) side first so it slips under the small edge opposite the retention tab.

3. Press the retention tab down over the sensor so it clicks closed.

4. With the battery door facing out, set the bracket into the dedicated space on your holster with the button on top, ensuring the sensor fits into the recessed portion so it contacts the holster.

5. Secure the bracket with the screws provided. Do not overtighten.

The next step is in the next section: Calibration.

Update firmware

Note

This topic is normally for the armorer or admin who sets up Signal Sensors. For user guidance, see Operation on page 3.

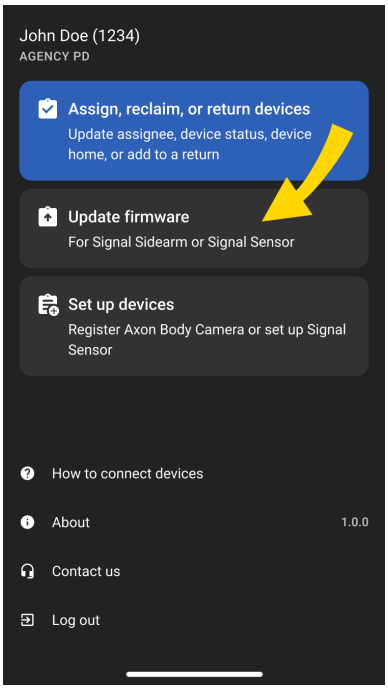
ADM checks for, downloads, and installs the latest firmware automatically prior to sensor Calibration (see page 6). This topic describes how to check for firmware updates manually on sensors that are already calibrated.

Signal Sensor will stay updated if near a body camera assigned to the same user. Over the course of a typical shift (about every two hours), the camera will ensure Signal Sensor firmware is up to date, download data, and check battery life. This requires the sensor to first be fully set up (see page 6), calibrated, and updated for initial use.

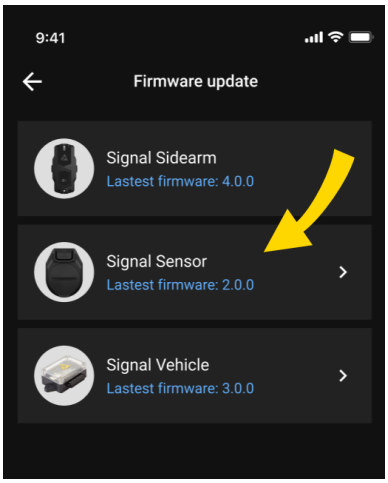
Update firmware manually

Turn on all sensors and keep them within one meter of your phone. You do not need to remove sensors from holsters for a firmware update.

1. In ADM, select **Update firmware**.

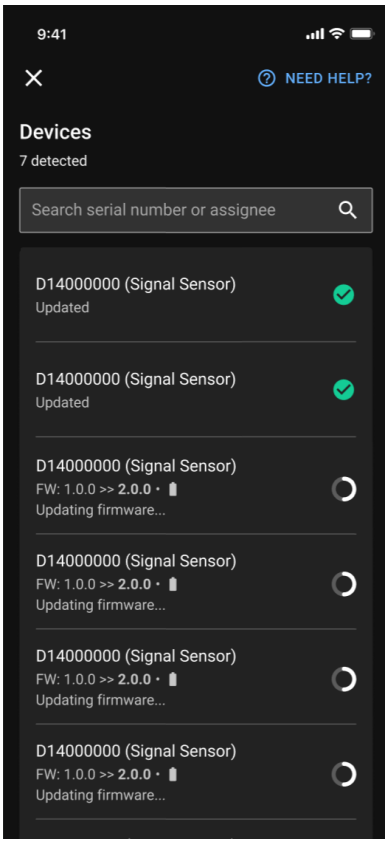


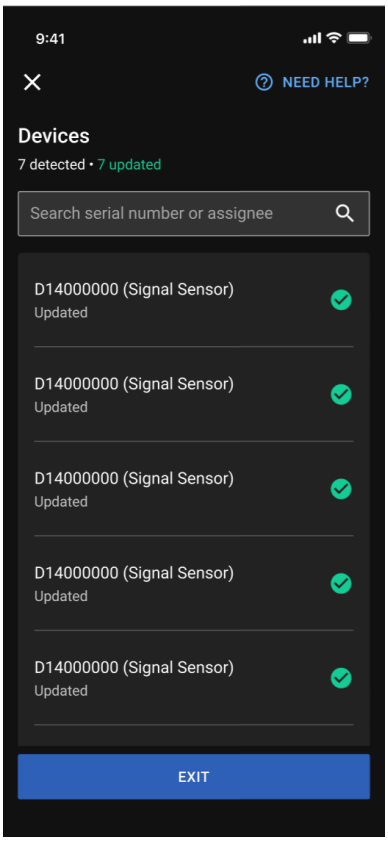
2. Select **Signal Sensor**.



3. As noted on the screen, press the button for about five seconds, release, press twice to enter Setup mode, then tap **Start**. ADM can handle up to seven sensors in Setup mode at once. An update may take up to eight minutes per sensor.

4. ADM lists detected devices, registers them if necessary, and downloads and installs firmware updates automatically, marking completed updates with a green check mark.





5. When all sensors are finished updating, tap **Exit** at the bottom (not shown).

Maintenance

This topic discusses maintenance, battery replacement, FAQs, and contact information for Axon technical support.

Find the battery level of a Signal Sensor device in Axon Evidence under Inventory > Signal > *your device*. This requires an Axon Body camera to be assigned to you, b/c the sensor reports battery life through the camera.

Extended exposure to concentrated amounts of sunscreen can cause cracks in the Signal Sensor device plastic housing. If you notice cracks in your device, please contact Technical Support.

Watch this video for more information battery replacement and low battery notifications.

Battery replacement

Replace the battery if you receive a notification on your Axon body camera or email from Axon Evidence. You'll need a large flat head screwdriver or coin and a CR2032 battery.

Changing the battery does *not* require recalibration.

Warning

Ensure the firearm is unloaded during this process. This sensor is for professional use; keep new and used batteries away from children.

1. To keep the sensor from activating cameras, place it in Mute mode (see page 4), remove the firearm, and set it safely aside.
2. Unscrew the battery cap on the front. Some holsters may need to be removed from the belt clip to allow removal of the battery cap.

3. Replace the old battery with a new one, ensuring you install it in the same direction (positive side up).
4. Replace the battery cover. The cover will properly center the battery in the sensor.

FAQs

If your issue is not listed here, see Technical information on page 32.

How do I download changes in Axon Evidence to my sensor?

Ensure your Axon Body camera and Signal Sensor are assigned to the same user. Dock the camera for at least four hours (after downloading any evidence) so it can receive updates from Axon Evidence. The next time you use your camera, changes pertinent to your sensor will download from the camera automatically within two hours.

How do I find my sensor serial number?

The 9-digit serial number starts with the letter D and is visible:

- In ADM; see step 5 of Setup on page 8
- In your Axon Evidence inventory
- In the menu of a body camera assigned to the same user
- On the back of the sensor, which may require removal from the holster

Why doesn't my Axon camera activate when I draw my firearm, baton, or other device?

- Both your sensor and your body camera must be assigned to you. Side note: if the **Assigned Officer Activation** setting in Axon Evidence is on, your sensor will only activate your camera; if off, it will activate all Axon cameras with a 30-ft (10-m) radius.
- Make sure the camera is powered on and has sufficient battery power. If you received a body camera or email notification that your Signal Sensor is low on battery, check battery status in Axon Evidence **Inventory** or in your Axon body camera menu (see Signal Sensor and your body camera on page 3).
- If any of the screws holding the sensor to the bracket or the bracket to the holster have come loose, it may not be able to consistently determine the state of your firearm. Ensure the sensor is as close to the holster body as possible and tighten all screws.
- The sensor was installed on a non-approved holster or with an incorrect bracket. Obtain the correct bracket for your holster from Axon and reinstall.

- The sensor was subjected to a major impact, was submerged, or was otherwise damaged to the point where it can no longer function properly. Check battery status in Axon Evidence > Inventory or ADM. Or, restart sensor setup(see page 1).
- If the sensor was used outside the operating temperature range, you may experience unexpected behavior. Allow the sensor to return to the storage and operating temperature range of -4–122 °F (-20–50 °C).
- Update the firmware (see page 25).
- There may be an issue with your camera. Consult your camera's user guide.
- An aftermarket modification to your firearm or holster is interfering with the sensor. Signal Sensor only works with approved unmodified holsters and firearms. Modifications such as using an aftermarket slide or painting the holster may cause a malfunction.
- You may already be in Mute mode (LED blinking green or red). To exit, wait 30–90 seconds for the sensor to return to Live mode (LED off).
- If you have just added or assigned a sensor to your agency for the first time, dock BWCs for up to four hours to let them download the latest data and recognize that the sensor has been added to your agency.

Why can't I enter Mute mode?

- You may already be in Mute mode (LED blinking green or red). To exit, wait 30–90 seconds for the sensor to return to Live mode (LED off).
- The button may be damaged and unable to receive input.
- Update the firmware (see page 25).

Why does my camera activate but I haven’t drawn my firearm?

- Your camera may have activated because another Axon Sensor device was used in range of your camera. This is intended behavior if set to do so in Axon Evidence.
- Your Signal Sensor sensor may have registered a false positive. Inspect the sensor and holster mount to see whether either is loose or damaged. If you get repeated false positives, your sensor may be malfunctioning.
- Inspect the equipment in its holster and/or pouch to confirm nd verify that it is not secure.

Why won't the sensor install properly on a holster?

Sometimes a forced installation can cause the retrofit bracket to bend, causing an unacceptable gap between the sensor and the holster body.

- Ensure your bracket is correct for your holster and your holster is a supported model. If you do not have the correct bracket, request one from Axon.
- Ask your armorer to disassemble the holster, belt clip, and bracket and reassemble carefully (see Installation on page 15).
- Verify the bracket is mounted closest to the holster. Install all other mounting equipment and accessories after the bracket.

Why does my battery last much less than the published battery life?

The battery life estimate is based on typical sensor use. If you use Mute mode or draw your firearm much more frequently than the typical use case, battery life can be reduced. Axon does not recommend adjusting the use of your firearm and holster to improve battery life.

- Restart sensor setup (see page 1)
- Update the firmware (see page 25)
- Replace the battery (see page 28)

If this problem continues, there may be a hardware problem with your sensor.

Why is my Signal Sensor so sensitive?

Signal Sensor was designed with the input of law enforcement officers to provide an optimal balance of sensitivity for registering true firearm (or other device) draws and rejecting normal daily interactions. Each holster and firearm combination has slightly different distances the firearm can be withdrawn before the sensor registers the absence of the firearm. In general, once the end of the firearm’s slide passes the center of the sensor, the sensor detects that the firearm is no longer present within 1–2 seconds.

Why is the LED dim, flickering, or not turning on as expected?

- The battery in your sensor may be very low and/or the sensor may be very cold. Replace the battery (see page 28) and/or allow the sensor to warm up.
- The LED may be damaged. Restart sensor setup (see page 1). If the LED still performs poorly, it is likely damaged. Your sensor will continue functioning without a working LED, but it will be impossible to know when it's in Mute mode.

Technical information

Technical support

Visit my.axon.com for support options or call 800-978-2737.

Warranty

Axon Enterprise, Inc. warranty provisions are applicable on all Axon Signal Sensor products. See www.axon.com/legal for detailed warranty information.

Radio waves

The Signal Sensor transmission is in the frequency range of 2402–2480 MHz, with maximum transmitted power 0 dBm (EIRP).

Changes or modifications to the equipment not expressly approved by the manufacturer could void the product warranty and the user's authority to operate the equipment.

Compliance

FCC compliance statement

Your wireless device is a radio transmitter and receiver. It is designed and manufactured not to exceed the emission limits for exposure to radio frequency (RF) energy set by the Federal Communications Commission (FCC) of the U.S. Government. These limits are part of comprehensive guidelines and establish permitted levels of RF energy for the general population. The guidelines are based on standards that were developed by independent scientific organizations through periodic and thorough evaluation of scientific studies. The standards include a substantial safety margin designed to assure the safety of all persons, regardless of age and health. Before a device model is available for sale to the public, it must be tested and certified to the FCC that it does not exceed the limit established by the government-adopted requirement for safe exposure. This equipment

has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult Axon Enterprise Technical Support for help.

This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Also see www.axon.com/legal.

ISED compliance statement

This device contains license-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's license-exempt RSS(s). Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation of the device.

This device has been tested and meets RF exposure guidelines when used with an accessory that contains no metal. Use of other accessories may not ensure compliance with RF exposure guidelines.

L'émetteur/récepteur exempt de licence contenu dans le présent appareil est conforme aux CNR d'Innovation, Sciences et Développement économique Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioelectrique subi, meme si le brouillage est susceptible d'en compromettre le fonctionnement.

Cet appareil a été testé et respecte les directives sur l'exposition aux RF lorsqu'il est utilisé avec un accessoire sans métal. L'utilisation d'autres accessoires peut ne pas garantir la conformité aux directives d'exposition aux RF.

EU declaration of conformity

Hereby, Axon Enterprise, Inc. declares that the radio equipment AX1046 is in compliance with Directive 2014/53/EU. The full text of the EU declaration of conformity is available at www.axon.com/legal.

The frequency band and the maximum transmitted power in the EU are: 2402–2480 MHz, 0 dBm (EIRP).